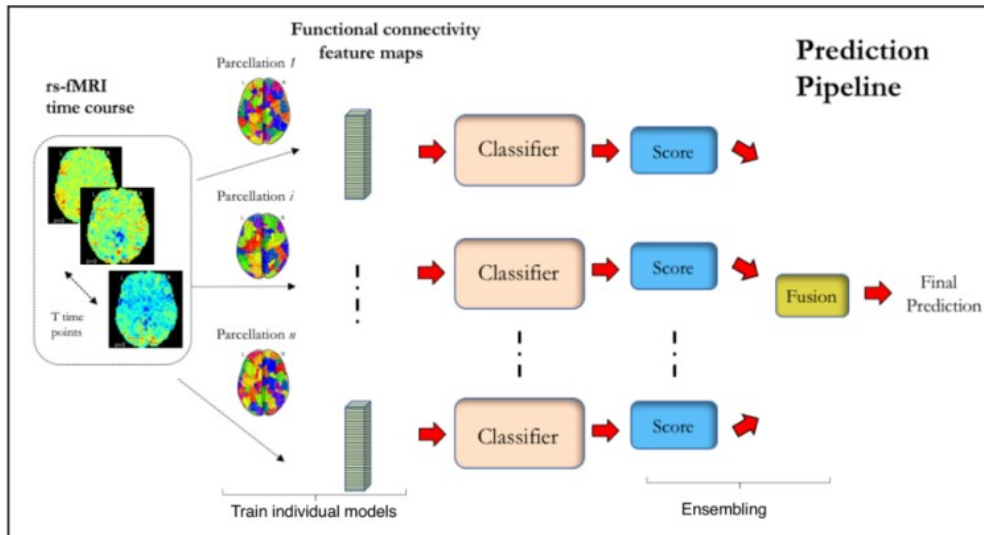# Proposal of classifying ASD using different age-based atlases

Based on your previous framework:

I have an idea as bellow:
Combing different age-based atlas to classify autism from healthy controls.

Note: we would like to conduct the following analysis on ABIDE I first. The ABIDE II dataset will be considered as an independent replication dataset in the future. So please analyze on ABIDE I first.

Steps:
(1) Please read Li W et al.'s paper I have sent you first. That's important. It will help you understand what the atlas is and what you are going to do.
In brief words, she did parcellation on four age stages: 8y-10y, 11y-14y, 15y-17y, 18y-21y for regions including SFG, ITG, SPL, INS and CG.
*Li, Wen, et al. "Brainnetome atlas of preadolescent children based on anatomical connectivity profiles." Cerebral Cortex (2022).*

(2) Then you may use the age information of each subject in ABIDE I to sort subjects into the corresponding age stages: 8y-10y, 11y-14y, 15y-17y, 18y-21y.

(3) For **each age stage**, please try the following model to get the

best accuracy based on the fMRI imaging. **Please note it is for each age stage, not all subjects.**

Note: you can test different classifier (CNN, SVM or others) to get the best accuracy.
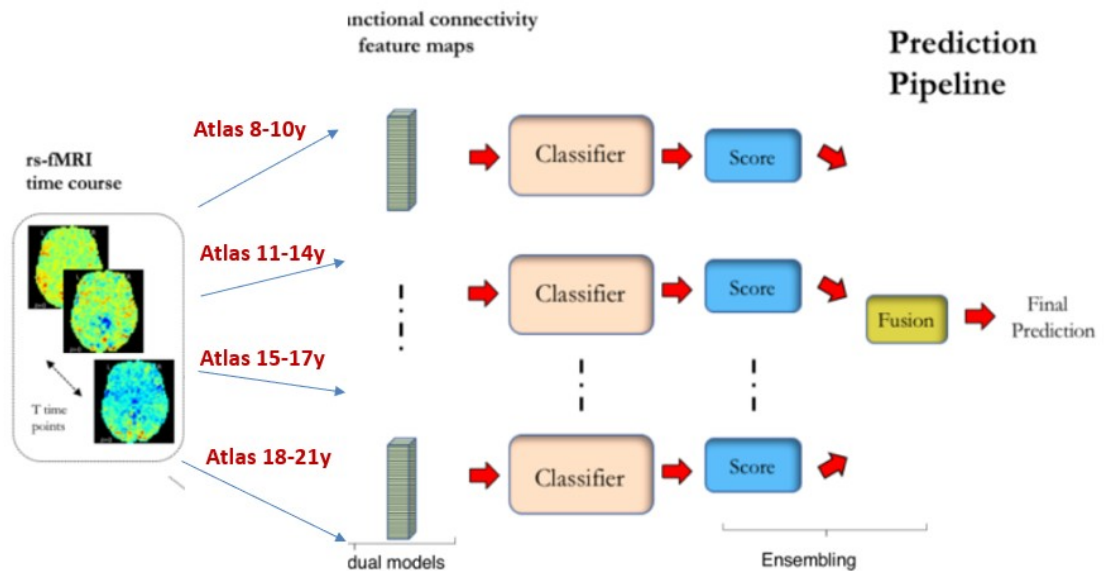
(4) From the above model, the best accuracy is not the only thing we want to see. We also want to know, for each age stage, which atlas will give the best weight. Moreover, we would like to see, which function connectivities contribute most.

(5) Validation our results on ABIDE II.